

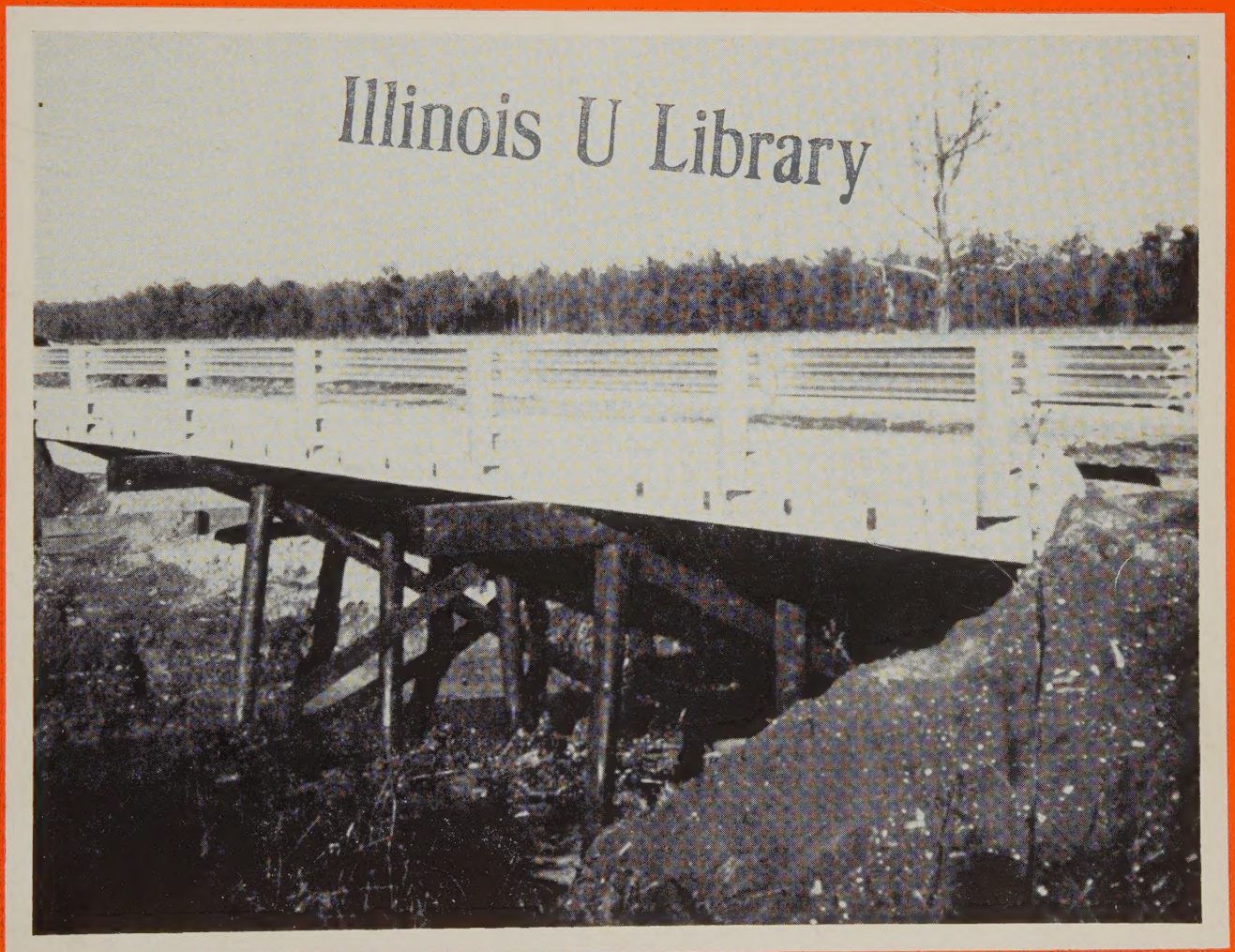
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the **ILLINOIS ENGINEER**



67th Annual Meeting, Peoria, April 3, 4 & 5, 1952



FIRST PRECAST, PRESTRESSED CONCRETE HIGHWAY DECK IN ILLINOIS
(See Article on Page 4)

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THE ILLINOIS ENGINEER, FEBRUARY, 1952—VOLUME XXVIII, NO. 2

Address all communications to the Society at 631 East Green St., Champaign, Illinois.
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Of Professional Interest

Every man owes some of his time to the up-building of the profession to which he belongs.

THE ILLINOIS ENGINEER—THIS MONTH

When this issue of the ILLINOIS ENGINEER reaches you, National Engineers' Week, February 17-23, will be just ahead. Has your Chapter done something about it? Even now it is not too late. Have it announced at your luncheon club—Rotary, Exchange, Lions, Kiwanis, etc. Remind them of the important role that engineering plays in their everyday lives—highways, water supply, electric power. Boast a little bit—not too much—just a little bit. You're proud of your profession. Let your friends know it.

Precast, prestressed concrete is much in the technical news these days. THE ILLINOIS ENGINEER is pleased to present an account of the first of such structures built in Illinois. Read E. G. Hurst's article.

W. A. OLIVER, *Editor*

PRESIDENT TRUMAN WRITES LETTER OBSERVING ENGINEERS' WEEK

Following is a letter addressed to National President L. L. Dresser from President Harry Truman concerning Engineers' Week, February 17-23, 1952. Has your Chapter planned something for this occasion? Invite some of the prominent people of your locality to your next meeting even though it does occur after February 23rd. It is never too late to promote the engineering profession.

THE WHITE HOUSE
WASHINGTON

January 12, 1952

Dear Mr. Dresser:

Your celebration of Engineers' Week is a fitting occasion for us all to offer our tribute to the engineering profession for its great practical contributions to our society.

In this hour of deep concern with the safety of the rights and liberty of the free peoples of the world, for the continuing growth of the invigorating principles of democracy, at home and over the seas, and for the protection of our cherished ways of life, it is particularly appropriate that your celebration, February 17-23, will coincide with the birthday of George Washington. Again it is our duty to fulfill the heroic tradition of service and courage engraved upon our Nation by the First President whose distinguished achievements included notable feats of engineering.

Please express to your Society and its members my good wishes and my abiding conviction that their profession will go on serving the Nation with complete devotion to the great cause of peace with liberty and honor.

Very sincerely yours,

(Signed) HARRY S. TRUMAN.

TENTATIVE PROGRAM OF THE 67TH ANNUAL MEETING

Pere Marquette Hotel

Peoria, Illinois

April 3, 4 and 5, 1952

Thursday

- 10:00 a.m. Board Meeting (to 4:00 p.m.)
- 12:30 p.m. Board Meeting Luncheon
- 1:00 p.m. Inspection Trip
- 4:00 p.m. Speaker, general interest paper
- 7:00 p.m. Smoker

Friday

- 8:15 a.m. Inspection Trip
- 9:00 a.m. Movies
- 9:30 a.m. Annual Business Meeting
- 12:00 noon Luncheon, Speaker L. L. Dresser, President NSPE
- 2:00 p.m. Speaker of general interest
- 3:00 p.m. Resumption of Business Meeting to 5:00 p.m.
- 7:00 p.m. Annual Banquet, Speaker of national interest

Saturday

- 9:00 a.m. Organization and meeting of 68th Board of Direction
General membership invited
- 12:00 noon Board Luncheon

Also: A ladies entertainment is being planned for all day Friday.

What appears to be a meeting of unusual interest has been planned. Get your hotel reservation now and be sure to attend.

LaVerne A. Miller

We regret to report that LaVerne A. Miller, long-time member of the Society, died very suddenly on January 22, while on vacation in Florida.

COST OF LIVING INDEX

The correction factor to be applied to the I. S. P. E. Schedule of Minimum Fees and Salaries was 190.3 for December, 1951. The factor is based upon the U. S. Department of Labor's most recent Consumer Price Index.

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READ THE ADVERTISEMENTS

SUBSCRIPTION RATES

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VOX SECRETARII

P. E. Roberts, Assistant Secretary

A Shortage of Engineers?

In the Spring of 1950, the United States Department of Labor, after a survey of leading employers, estimated that there would be a substantial surplus of engineers directly following the graduation of the record-breaking 1950 engineering class of 52,000. Events following the prediction proved that the estimate was far from correct in that industry quickly absorbed all graduates and asked for more. However, the net result of the Department of Labor's bad guess was to dissuade large numbers of young men, entering colleges in the Fall of 1950, from pursuing an engineering course. In the Department of Labor's bulletin, "Employment Outlook for Engineering," August 1951, the estimated number of engineering graduates are as follows: 1951, 38,000; 1952, 26,000; 1953, 20,000; 1954, 17,000. The actual totals for 1951 and the projected figures for 1952 are very close to this estimate.

At the present time it is estimated that there are over 400,000 engineers employed in the country which is ten times the number of engineers who were employed in 1900. To state it another way, in 1900 there was one engineer for about 255 workmen, while in 1950 there was one engineer for every 64 workmen. Projection of graphical charts indicate that the trend toward a decreasing number of workmen per engineer will continue for some time. Present estimates show requirements for 30,000 new engineers per year, taking into account deaths, retirement and new positions available.

If the above estimates are substantially correct, the engineering profession should take steps to fill the gap until a greater number of young men can be attracted to and have time to finish an education.

The time at which a thing is said or a task is done has become of increased importance with the expansion of communications. Often a business will gain, not only increased work out-put but also a better quality of work, by a change in timing. A study of peak loads, how many times they occur and why they come at a particular time will disclose the fact that part of the work can be shifted to a non-peak load period without disrupting routine. A simple questionnaire will usually supply the needed information. Timing is an important phase of the operation of a successful business and should be studied at regular intervals.

A study of the kind of work done by each engineering employee might reveal some startling facts. "Kind of work" should not be confused with quality of work. While it is true that some engineers do detail work better and more easily than others, kind of work refers to the actual work he is doing. For instance, one of the largest employers of engineers uses only engineers for their personnel work. A sizeable quantity of engineers could be released for engineering work if this employer would use men trained in personnel work on that job

OFFICERS OF LADIES' AUXILIARY
CENTRAL ILLINOIS CHAPTER

Left to right, seated: Mrs. Albert Brensley, Secretary; Mrs. Floyd E. Troxel, President; Mrs. Edward Weiland, Vice President; Standing: Mrs. Elmer Tomlinson, Board Chairman; Mrs. Russell Carter, Board Member; Mrs. Earl Cooper, Treasurer; Mrs. Walter Scherer, Board Member.

instead of engineers. Again, throughout industry, engineers are found in administrative positions. It is true that there are some administrative positions which can be filled better by engineers than by men trained in other fields but in the majority of cases, engineers could be released for design work, and administrative work can be done by men who have little knowledge of engineering. Also, while the figures are not available, there are literally thousands of engineers spending millions of man hours over drawing boards when the work could be done as well by draftsmen. Furthermore, many men who earned engineering degrees did not follow their education, but turned to selling and other fields. If the compensation were comparable to that paid in other fields, many engineers could be induced to return to engineering work.

It may well be that, rather than an actual shortage of engineers, there has been a misuse of engineering talent. It may be that by an upward revision of engineering compensation, a change in timing within companies, and a reshuffle of men to replace engineers doing non-engineering work by others, enough engineering talent would be uncovered to bridge over the period to the time when there are enough men being graduated each year to satisfy the country's need. At least the problem deserves serious study.

CONTRACTORS ELECT

W. R. Stoune Heads Builders

W. R. Stoune, member, Central Illinois Chapter, of Fisher-Stoune, Inc., was recently elected president of the Decatur Contractors association, succeeding Lester Foltz.

The annual election of officers was held at a dinner meeting in the St. Nicholas hotel.

CENTENNIAL OF ENGINEERING—MORE INFORMATION

Completion of the 37-man board of directors who will head the Centennial of Engineering celebration to be held in Chicago during this year is announced by Lenox R. Lohr, its president.

The Centennial, which is being sponsored by 41 national and international groups that include in their membership the great majority of the engineering profession in the United States, will mark the 100th anniversary of the establishment of engineering as a recognized civilian profession in this country. Prior to 1852, when the American Society of Civil Engineers was founded, practically all important engineering work on this side of the Atlantic was conducted by military engineers.

Filling of the last vacancies on the Centennial's board was consummated with acceptances of their election by David Sarnoff, chairman of the Radio Corporation of America; James M. Todd of James M. Todd Associates of New Orleans, and past president of the American Society of Mechanical Engineers; and Gano Dunn, president of the J. G. White Engineering Corporation, of New York.

Other prominent members of the board include Herbert Hoover, only living former President of the United States; Charles F. Kettering, General Motors research consultant; Benjamin F. Fairless, president of the U. S. Steel Corporation; and Dr. Robert E. Wilson, chairman of the Standard Oil Company of Indiana.

Officers of the Centennial in addition to Lohr, are Carlton S. Proctor, of New York, and president of the American Society of Civil Engineers, vice president; Titus G. LeClair, Commonwealth Edison Company, Chicago, and past president of the American Institute of Electrical Engineers, treasurer; and Charles F. Kettering, Chairman of the executive committee.

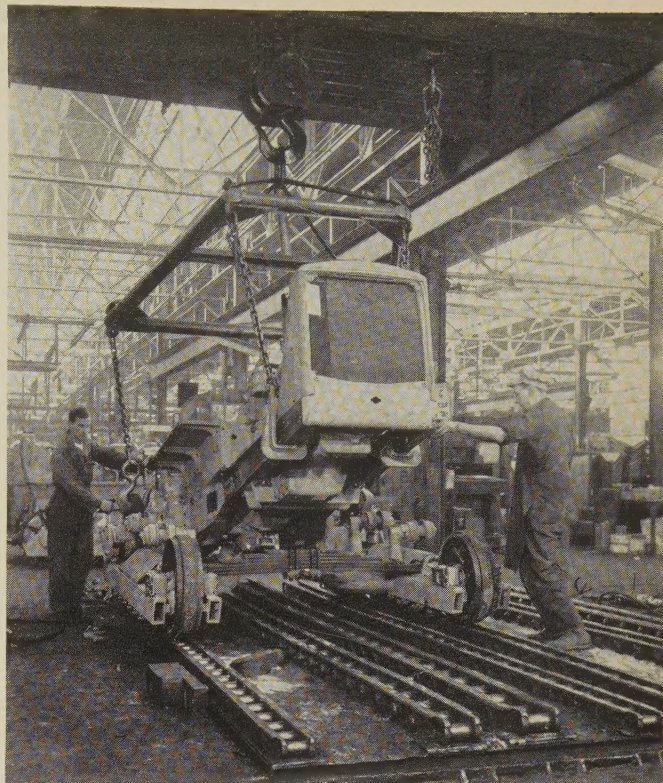
N.S.P.E. ISSUES SECOND INTERIM REPORT

Salary and Fee Schedule Committee

A subcommittee of the N.S.P.E. Salary and Fee Schedule Committee, under the chairmanship of Mr. Murray Wilson of Kansas, conducted a survey in 1951 in an endeavor to determine actual fee practices among a representative group of consulting firms throughout the country. The results of this study are contained in the attached Interim Report No. 2 of the Salary and Fee Schedule Committee.

It is believed that this study will be of assistance to state committees studying the revision of fee schedules, and of interest to consulting engineers in your Chapter. A copy of the report may be obtained by addressing a request to the national office of the N.S.P.E.

Remember: When you're average, you're as near to the bottom as you are to the top.



Assembly Line, Caterpillar Tractor Co.
One of Peoria's Leading Industries

FROM "CAPITAL CHAPTER CHATTER"

President's Message

Our task as professional engineers, as stated in the constitutions of NSPE, ISPE, and Capital Chapter, is to make a contribution to public progress and welfare at the local, state, and national levels; to create public appreciation and recognition of this contribution; and to work to advance the professional, ethical, economic, and social aspects of engineering.

In order to accomplish this, we have 20 local committees, 22 state committees, and 31 national committees. These all have certain functions, some working on relatively small parts, but the combined effort of all is necessary to accomplish the over-all purpose.

With the help of the entire membership, it is our thought to concentrate particularly on the work of the committees relating to our local community affairs and those helping to obtain local appreciation and recognition of our efforts. Thought can also be given by each committee in planning for the future and assisting their counterpart in state and national committees.

The response by members requested to serve as committee chairmen and committee members has been splendid.

By a small amount of effort on the part of each of us, we can accomplish our task for the year, so that at the year's end we can look back, as has been done in past years, and say that Capital Chapter has carried its full load in NSPE and ISPE.

LESLIE RYBURN, *Chapter President*

First Prestressed, Precast Concrete Highway Bridge in Illinois

E. G. HURST, Member N.S.P.E.
Consulting Engineer, Hillsboro, Illinois

Prestressed concrete design is rapidly gaining usage in the United States after a rather belated start. In these times of steel shortage the economy in design available by prestressing makes a clear understanding of the methods a necessity for all design engineers. The technique that promises great economies in steel as well as monetary savings is the use of concrete blocks, manufactured on high production machines and assembled into beams, by using as reinforcement, cables which are tensioned as high as 135,000 p.s.i.

The use of prestressed concrete block beams has been developed in the last two years by Bryan and Dozier, Consulting Engineers of Nashville, Tennessee, who have designed and constructed highway bridges, building roof and floor slabs, and even stadiums using this type of construction. Hurst-Rosche, Consulting Engineers of Hillsboro, Illinois, have just completed the first structure of this nature in Illinois. It is a 30-foot span bridge with a 22-foot roadway, designed for H-15 loading; the bridge is located in Montgomery County and was built under the supervision of J. O. Whitlock, County Superintendent of Highways of that county. The plans were approved by the office of Mr. W. E. Hanson, Bridge Engineer, Division of Highways, and engineers from that office made periodic inspections until the project was completed.

The bridge substructure was creosoted piling and abutments, and the design used was similar to those constructed with a standard I-beam and reinforced concrete deck. The design of the prestressed concrete block beams was based on the following data:

Span: 30'-0"

Loading: H-15-44 A.A.S.H.O.

Allowable Stress:

$f'_c = 3750$ p.s.i.

$f_c = 1250$ p.s.i.

$f_s = 130,000$ p.s.i. Tensioning Stress

15% Loss was assumed due to creep and/or shrinkage.

Two 0.6" dia. cables per beam—ultimate strength per cable—46,000 lbs.

Area per cable: 0.215 sq. in.

Eccentricity of cables at mid-span: 6.363"

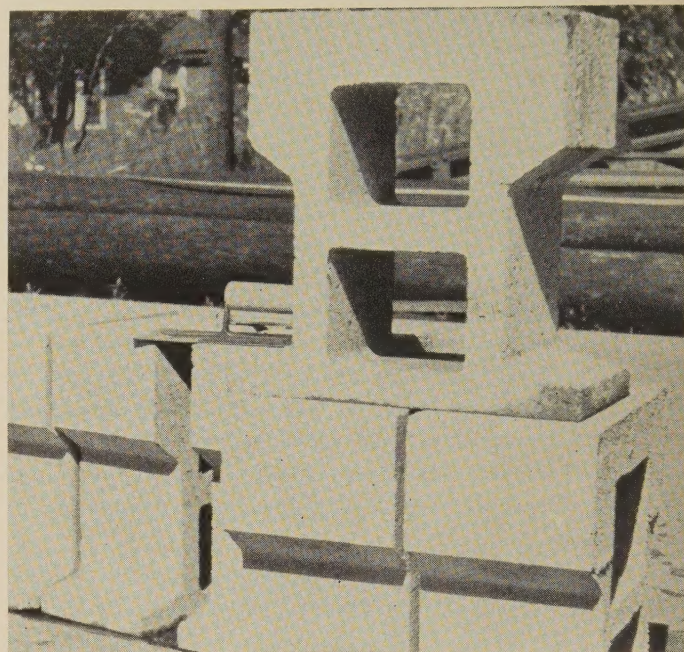
Eccentricity of cables at ends: 0.363"

Beams to be constructed of 16" deep, 16" wide, 8" long block units.

Joints between blocks to be $\frac{1}{4}$ " thick. Mortar minimum strength—3,000 p.s.i.

Design Loads:

Loads per beam. Beams on 16" centers.



Beam Block

Uniform load: 64.00 lbs. per lin. ft.

Concentrated load: 1800 lbs. per lin. ft. bm. (at midspan)

Impact fraction: 0.30

The beams were investigated under five conditions, which are given below with the stress developed by each condition. F_b is stress at bottom of cast in place concrete. F_t is stress at crown of roadway.

Condition 1. Prestress (initial) plus beam weight:

$F_b = 1084$ lbs. per sq. in. C

$F_t = 81$ lbs. per sq. in. C

Condition 2. Prestress (final) plus beam weight:

$F_b = 867$ lbs. per sq. in. C

$F_t = 121$ lbs. per sq. in. C

Condition 3. Prestress (final) plus beam weight plus cast-in-place concrete:

$F_b = 417$ lbs. per sq. in. C

$F_t = 464$ lbs. per sq. in. C

Condition 4. Prestress (final) plus beam weight plus cast-in-place concrete plus live and impact loads:

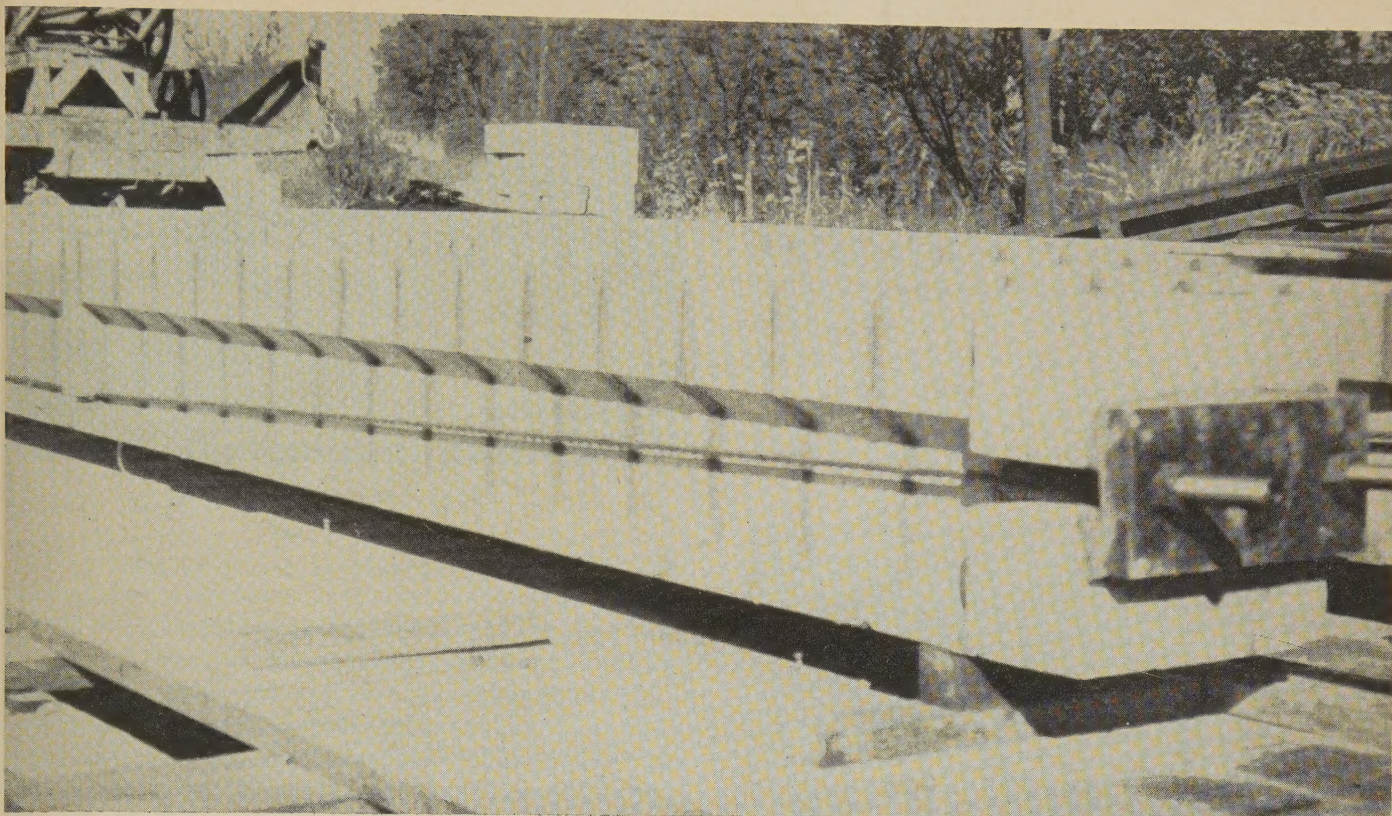
$F_b = 4$ lbs. per sq. in. T

$F_t = 712$ lbs. per sq. in. C

Condition 5. Live and impact loads (cast-in-place only):

$F_b = 368$ lbs. per sq. in. T

$F_t = 377$ lbs. per sq. in. C



Initial Prestress

Note that a maximum tensile stress of 368 lbs. per sq. in. exists in the cast-in-place concrete under full live and impact loads. This stress is not enough to cause cracking, which will occur at $0.14 \times 3750 = 525$ lbs. per sq. in.

Other design results:

Maximum deflection under full dead load and prestress = 0.013"

Maximum diagonal tension under full live load and impact = 16,690 lbs.

Static moment = 582.7 In³

Maximum horizontal shear = 137 lbs. per sq. in.

Maximum normal unit stress at centroidal axis = 204 lbs. per sq. in. C

The assembly of the beams is relatively simple and can be done with unskilled labor. The procedure used on the Montgomery County bridge is typical and will give an idea of the techniques required. After the blocks had cured for 28 days to eliminate shrinkage, they were placed on an assembly platform which was constructed on the ground by leveling some three-inch rough-sawn lumber to form an area about 40 feet long and 20 feet wide. Wooden plugs were placed inside the block cores and a metal jig slipped over the outside of the block unit; this jig extended one-quarter of an inch above the top of the block. Mortar was shoveled on top of the block and struck off with a metal screed. The jig and plugs were lifted out and a quarter-inch of mortar remained. First, the end block was placed in line; this block was a solid unit with two slots in the center of

the sides to hold the cables in place on 11-inch centers. Then the beam blocks were tamped into place. Positioning units, which were solid blocks with slots in the lower half, were placed at approximate quarter points to hold the cable two inches from the bottom of the beams. This assured the eccentricity need for the prestressing to be effective.

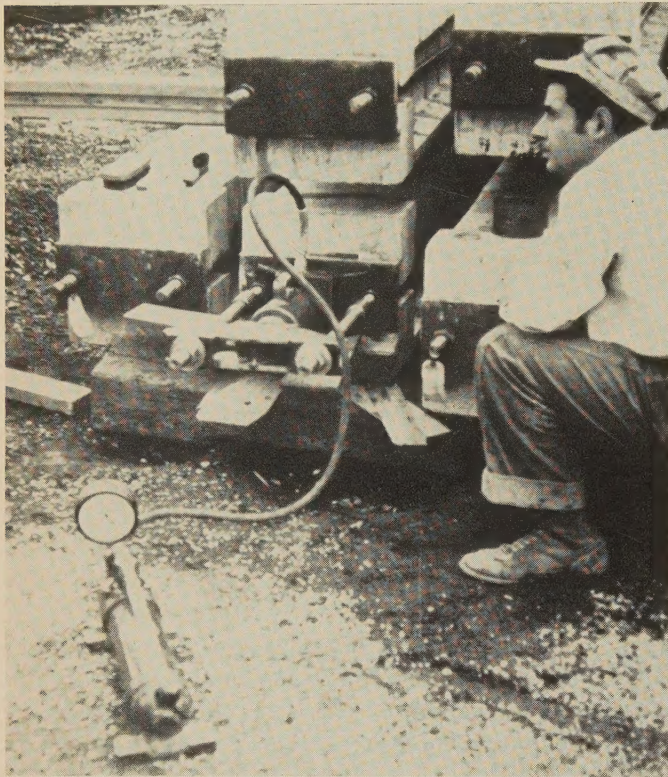
Steel end plates, 7" x 15" x $\frac{3}{4}$ " were mortared in place. These plates had two holes drilled on 11-inch centers and through these the cables were threaded. The cables were hooked under the slots of the positioning blocks and the steel end plates were set at a slight angle with the end blocks so that the stresses would be parallel to the cables' axis. The cables, manufactured by Roebling, were seven strands with a total diameter of 0.60 inch. The ends were fitted with a cone-shaped connection made of poured metal around the separated ends of the strands and threaded for a stud. This stud was passed through the holes in the end plate and held snug with a nut.

Prestress was obtained with a 50-ton hydraulic jack equipped with a gauge. The cylinder of the jack was separate from the pump, and a rig consisting of a steel plate with two bolts on 11-inch centers was used to hold this cylinder against the beam end plate. Two unions fastened the bolts to the studs of the cables and the jack cylinder was then easily held between the end plate and the plate of the jacking rig.

As soon as the blocks were mortared in place, the cables were tensioned to about 5,000 pounds each and the nuts on the studs tightened to hold this tension.

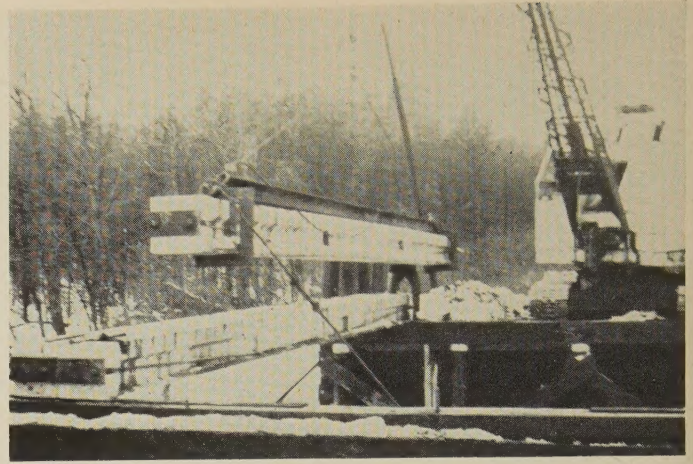
Care was exercised not to develop too much tension, or the center of the beam would have been lifted from the assembly platform. Any camber in the beam obtained at this time would remain, and this was undesirable. The following day, the cables were tensioned to a total of 20,000 pounds each, and this permitted the beams to be transported to a storage yard. After the mortar had reached a compressive strength of 3,000 p.s.i., which required about seven days, the final prestress was applied. A total tension of 27,950 pounds per cable was applied, and then the stress was released to 23,758 pounds per cable. This was done to prevent excessive creep.

After final tensioning had been applied, six equidistant holes were drilled in the beams for transverse cables.



Applying Final Prestress

These cables were threaded as the beams were placed on the abutments and tensioned lightly with a hand wrench. The beams were two inches wider at the bottom than at the top, and the transverse cables were wrapped in paper to prevent bond in the aperture created between the beams by this difference in dimension. End and side wall forms were built, and concrete was then vibrated into the spaces between the beams, care being taken to assure complete encasement of the cables, both longitudinal and transverse. A concrete wearing surface two inches thick at the edges of the bridge and crowned to three inches in the center was placed at the same time, so that the entire floor, beams and wearing surface were cast into a homogeneous mass. Fifty-eight pound wire mesh was placed in the wearing surface. Then the precast hubguard and handrail posts were bolted into place



Placing Beams on the Bridge

and the metal handrail installed. After the concrete wearing surface had gained a compressive strength of 3,750 p.s.i., the transverse cables were tensioned to 30,000 pounds each and the bridge opened to traffic.

The prestressed block bridge has many advantages which make it economical construction, and one of the most important is the short time required to place the superstructure. Experience on the Montgomery County bridge indicates that similar spans, using high early strength cement for the floor, could be constructed and opened to traffic in one week. This assumes the use of only five unskilled laborers and includes beam assembly.

Other advantages of the prestressed block bridge are elimination of steel requiring future painting and a gain of about two feet clearance over an I-beam deck, reflecting a saving in height of abutments and approach grades. And the last advantage, but, in these times of shortages, certainly not least important, is the small amount of steel required. The major reinforcement is cable, of which there is an ample supply. The only structural steel required is the end plates, and on recent designs a saddle block is being specified which eliminates one end plate by permitting the cable to pass around a circular groove and return to the opposite end of the beam. Half-inch round bars are used in the precast hubguard and handrail posts. For a 30-foot span bridge with a 22-foot roadway, the total poundage of steel required is well under one ton, excluding the weight of the cable.

RESULTS OF THE 1952 ELECTION

The polls closed at 5:00 p. m. January 15th; the teller's committee met at 2:00 p. m. January 21st, and report the following results:

President—A. Douglas Spicer.

Vice-President—Raymond G. Brichler.

For Junior Representative on the Board of Direction—James L. Mills.

Tellers—William J. Putnam, Milton O. Schmidt, H. L. White.

Chicago Chapter News

H. F. SOMMERSCHIELD, Editor
33 West Grand Ave., Chicago

Dr. Henry T. Heald Honored

A number of Chicago Chapter members attended the Testimonial Dinner for Dr. Heald held in the Ballroom of the Sherman Hotel. Over 600 from the Chapters and Sections of various engineering societies attended to do honor to the guest of the evening. Frank W. Edwards, General Manager of Centennial of Engineering was seated at the speakers' table as President of Chicago Chapter. A. L. Ralph Sanders likewise represented the Illinois Section of ASCE. Mr. Sanders is also a member of ISPE. State President Virgil O. Gunlock was also among those present. Dr. Heald will soon take up his duties as Chancellor of New York University.

February Meeting

Chester A. Arents, chairman of the program committee for 1952, has announced that the February meeting will be held on the 14th at the Western Society of Engineers headquarters at 84 East Randolph. Dean John Day Larkin, Dean of Liberal Studies at Illinois Institute of Technology will be the speaker of the evening. His subject will be "Peaceful Settlement of Industrial Disputes." Dean Larkin is a consultant in the field of labor relations.

L. D. Gayton

Mr. Loran D. Gayton, Aide to Chicago City Engineer W. W. Deberard, suffered a fatal heart attack Monday, December 24. Mr. Gayton, affectionately known as Larry by his host of Chicago friends, was a past State President of ISPE. At the last annual meeting of Chicago Chapter he was one of the honored recipients of a past president's certificate. Larry's passing is a great loss to Chicago and to our society. His many friends will always remember his personable manner.

Pot Pourri

Alois Graf was recently elected as Regional Director of the Institute of Radio Engineers. Mr. Graf is an active member of ISPE and is presently serving as chairman of the Ethics and Practice Committee.

Harold F. Sommerschield spoke to the members of Lake County Chapter of ISPE January 16 on the subject "Prestressed Concrete." He was also requested to make a few remarks relative to the Centennial of Engineering Convocation to be held in Chicago September 3-13 inclusive, and the part ISPE would play in this event.

John G. Duba has been appointed as Editor of the Illinois Section ASCE News Letter.

Rudyard M. Cook, formerly a member of the faculty at Northwestern Technological Institute, has left Chicago to accept an appointment as Head of the Civil Engineering Department of the University of Akron.

Committee Chairmen

President Edwards announced the appointment of the following Committee Chairmen to service for 1952:

C. B. Burdick—Young Engineers Councillor
Duncan M. Campbell—Legislation and Registration Law
Howard J. Hanson—Young Engineers
L. M. Keoughan—Civil Defense
Bernard A. Moore—State Building Code

Centennial of Engineering

Work is progressing on the plans for the Centennial. There are over 50 engineering societies represented on the Coordinating Committee which meets monthly. There is little doubt that the Centennial Convocation will be the greatest gathering of engineers ever held. Chicago Chapter Past President George DeMent is representing ISPE on this Coordinating Committee.

AUTO SPARKS GROWTH OF VACATION TRAVEL

Vacation travel in the U. S. has grown into a \$10-billion-a-year industry, according to a newly released study by the American Automobile Association.

The number of Americans taking vacations, according to the survey, is 72,000,000, almost half the population, and the total is increasing every year.

Increasing ownership and use of automobiles is given as the chief reason for this rapid growth in vacation travel.

At least 63,000,000 persons a year make vacation trips by car, the AAA reports, with this mode of transportation being used in 80 to 90 per cent of all vacation travel. National parks, the major vacation travel objective, were visited by more than 13½ million persons last year, 96.3 per cent of whom arrived by automobile.

Other factors listed as contributing to the increase in vacation travel are the rising standard of living; spread of the 40-hour week with annual paid vacations; growth in national population; intensive promotion by states, regions, and transportation interests, and development of new vacation areas.

The study shows that at least 16 states now rank travel among their three most important industries and that almost all are engaged in advertising and promoting their resort areas, scenic attractions, and points of interest.

67th Annual Meeting

April 3, 4 and 5, 1952

Hotel Pere Marquette, Peoria

News From Chapters

Kewanee Chapter

The December meeting of the Kewanee Chapter, Illinois Society of Professional Engineers, was held on December 18, 1951, at the Hotel Kewanee, President Lee Osborn presiding. The meeting was preceded by a fine chicken dinner after which the introduction of members and guests were made from table to table.

The Secretary read the minutes of the last meeting which were approved as read. A bill for \$20.10 from the Quad-City Technical Council for 1952 membership expense was voted to be paid. A discussion regarding our membership in this Council inasmuch as their bulletin is printed early we miss the date line for the announcement of our meeting. It was the opinion of the membership that we continue our membership in the Council and instruct our committee to try and improve our announcements to meet the deadline.

President Osborn called upon Harold Pappmeier, who gave a talk on what he has done in Galesburg for Engineers' Week. George Lindsley also talked on what plans were made for Kewanee during Engineers' Week. No one reported from Rock Island.

The nominating committee consisting of C. F. Bates, C. E. Bronson, and Henry Weimer reported the following for officers in Kewanee Chapter for 1952: president, Clifford Missman; vice president, James Morrow. It was moved by Pappmeier and seconded that the nominations be closed, and carried.

Some discussion was had on the conflicting dates between the Chapter and the Tri-City section of the A.S. C.E., it was moved by Bates and seconded that the President appoint a committee to investigate the problem and recommend to the Chapter if a change in date of our meeting, thereby improving the situation, the motion was carried. President Osborn appointed Palmer (Rock Island), Charlet (Kewanee), and Pappmeier (Galesburg) as the committee.

Under new business Mr. Clifford Missman was elected President and Mr. James Morrow was elected Vice President. No other elections were necessary as our Chapter Representative was not due this year for re-election.

President Osborn called upon A. D. Spicer, who introduced Mr. Virgil Gunlock, President of the Illinois Society of Professional Engineers, who gave a talk on Civil Defense. Mr. Gunlock's talk well taken as his experience with Civil Defense in the city of Chicago. He has spent much time and study enabling him to give a very clear picture of what the people and cities are up against in case of a disaster.

Many members in attendance expressed their thanks for such an educational meeting. This being ladies night, the wives of many members were present.

The meeting closed at 10:10 p.m. with an attendance of 31 members present.

The January meeting of the Kewanee Chapter, Illinois Society of Professional Engineers, was held in Galesburg, Illinois, Thursday evening, January 15, 1952, at Club 19, on the north limits of Galesburg. Meeting was called to order by President Osborn at 6:45, preceded by a chicken dinner. Introduction of guests and members was made around the table. The Secretary read the minutes of the last meeting which were approved as read.

William Barnes gave a talk on what the committee in Galesburg had done along with Engineers' Week, in which he had secured some help and information from the National Association regarding radio and other helps for their week.

A letter was read from R. E. Stanley of Rock Island, in which he outlined what he had done in the Tri-Cities for Engineers' Week. Chapter Representative Louis Pappmeier talked on the change in date of our meetings, in which he pointed out that Tuesday was a bad night for attendance as service clubs and other Engineering Societies as well as school boards and City Councils were always meeting in the first part of each week. It was moved by Mr. Pappmeier that our meeting be changed from the third Tuesday to the third Thursday of each month. It was seconded and carried. Representative Pappmeier called attention of the State Board meeting to be held in Peoria on February 2, and asked all the officers to try and be present for the meeting.

President Lee Osborn then installed the new officers for the coming year, who were as follows: President Clifford Missman, Vice President James Morrow. President Clifford Missman gave a few remarks on the Chapter state annual meeting to be held in the Spring of 1953. After much discussion around the table it was decided to feel our way around in Rock Island and Moline and see what the prospects were among hotel operators and civic groups toward holding the state annual meeting in the Tri-Cities in 1953. The President appointed Palmer, Boudinot, and Osborn as a committee to see what the outlook would be for such a meeting.

Louis Pappmeier introduced his son, Mr. Harold Pappmeier, who entertained the club with some fine moving pictures on our National Park system in which he has visited extending from Canada to Mexico, the pictures were very good and enjoyed by all.

The meeting closed at 10:15 p.m. with an attendance of 21 members present.

At the close of the meeting the executive committee held its annual meeting and appointed C. F. Bates as secretary for the year.

C. F. BATES, *Secretary*

Madison County Chapter

Twelve members and three guests met on the evening of Tuesday, November 13, 1951, in the Conference Room

of Alton Box Board Company, at Alton. Since our meeting of October 9 was a conducted tour of the St. Louis Shipbuilding and Steel Co., without a business session, the minutes of the meeting of September 11 were read and approved.

Guests introduced were Mr. John C. Evans of Alton Box Board Co., and Mr. Don McLain of Western Brass Mills.

President Shanahan, reporting on the November 3 meeting of the Board of Direction, said the State Society is still operating "in the black," and the publication running within its budget. On the matter of Year Book Plans, a motion by Corlew, seconded by Sheppard, recommended Plan No. 6, to support the year book by sale of advertising, our quota being \$85 for 1 1/8 pages.

For the office of chapter president, Willis nominated Graves, Graves nominated Sheppard, Graham nominated Art Adams, and Sheppard nominated Corlew. The secretary tabulated the count of secret ballots, assisted by Graham and Flagg, and President Shanahan announced the election of C. H. Sheppard as chapter president for the year 1952.

Flagg nominated Mal Graham for vice-president. Nominations were closed, and the secretary instructed to cast twelve votes for the unanimous election of Mal Graham as vice-president.

Voorhees nominated Morgan Corlew for secretary-treasurer. Motion by Flagg, seconded by Willis, to close nominations, carried, and a unanimous ballot was cast for the election of Morgan Corlew as secretary-treasurer.

A similar process, put in motion by Mr. Willis, resulted in the unanimous election of George Shanahan as chapter representative for 1952-53.

For members of the Executive Committee, Voorhees nominated A. G. Adams, Graham nominated Les Meyer, and Flagg nominated Charles Graves. Willis moved to close nominations, and a unanimous ballot was cast.

Chairman Flagg of the Membership Committee gave a report, with suggestions for bringing any delinquent members "back into the fold."

Civil Defense Chairman Corlew presented statistics on Russian developments, from a two-weeks active-duty course at Peoria.

Having patiently waited through the business part of our meeting, Mr. Julian Valette of the General Electric Company spoke on "The Wonders of Water." The motion picture following was entitled "Pipeline to the Clouds," and pamphlets were distributed which urged support of the local waterworks program. Adjournment was followed by a prepared lunch in the plant cafeteria.

* * *

On Tuesday evening, December 11, 1951, our Annual Christmas Dinner meeting was held at the Y. W. C. A., in Alton. Fifteen members and 27 guests were present to enjoy the delicious dinner of roast turkey. Mr. Garcia and Mr. Meek of the St. Clair Chapter, with their wives, were among the guests introduced.

Retiring President Shanahan, reviewing the good programs of the past year and the poor attendance at some of the meetings, suggested that the whole organization be a membership committee to boost membership and attendance.

President-elect Sheppard expressed the hope that those called on to carry on the work of the various committees will all help.

Following introductions of the other new officers, Mal Graham presented the master of ceremonies, Frank Ballard, who directed the rest of the program including a "dramatic" number, music, quiz show, recitations, and impersonations by members of the "audience."

Home movies of chosen subjects, and a film entitled "The Other Christmas Tree," were followed by a visit from Santa Claus, with gifts, and the singing of Christmas carols.

L. K. MEYER, (Retiring) *Secretary*

Joliet Chapter

The Joliet Engineers' Club held its regular meeting on December 18, 1951, at Al's Place in Troy. Following a short business meeting, the following names were presented for balloting for officers during the coming year:

President—Fred H. Titsworth

Vice-President—William S. Chaney

Secretary—W. K. Waltz

Treasurer—J. Wilbert Ryan.

C. E. Rogers moved that the ballot be accepted unanimously and was seconded by Max Seiberling; motion carried. The retiring president thanked all the members for their cooperation in making his year a good one. Incoming President Fred H. Titsworth invited the members to cooperate with him to help make our club a growing, expanding organization. Following this the entertainment was presented by George Wagner and Gil Schweser. The meeting was attended by 21 members and 2 guests. The meeting opened at 8:10 p. m. and was adjourned at 9:45 p. m.

WILLIAM S. CHANEY, *Secretary*

Rock River Chapter

Meeting of September 14, 1951 called to order by President R. G. Thomas, who announced that this would be the last meeting at which he would preside, as he is entering Michigan University at Ann Arbor this fall.

The minutes of the meeting of March 30 were read and approved.

Chapter Representative R. H. Anderson reported the last meeting of the Board of Direction of the Society.

W. E. Gronberg, chairman of the Membership Committee, reported that three prospective members were submitting applications: Franklin W. Forman, Richard E. Lovett and Walter M. Isaac.

L. J. Woodyatt, co-chairman of the Annual Picnic Committee, read the financial report for the picnic. The total profit was \$4.00, half of which belongs to the Rockford Chapter. That was the closest figuring that a picnic committee has done in years.

Hon. C. K. Willett, Representative from this district, and a member of this chapter, introduced the president of the Society, V. E. Gunlock, who gave us a very interesting and informative talk on the Chicago plan for Civil Defense. Many questions were asked and we all had a much better understanding of the problems involved and the methods to be used in case of an emergency. The guests included Mayor William V. Slotmower and other members of the Civil Defense organization in Dixon.

The meeting was adjourned at 9:50 p. m., after which refreshments were served.

* * *

The Annual Meeting was called to order on January 11, 1952 by Vice-President V. E. Hopper, in the absence of President R. G. Thomas, who is furthering his education at the University of Michigan. The minutes of the meeting of September 14, the last meeting at which business was transacted, were read and approved.

At the March 30 meeting, the secretary was directed to notify the members of the chapter that the By-Laws were to be amended, reducing the number required for a quorum from 25 to 18. The following amended Section 3 of the By-Laws was submitted in writing to each member of the chapter ten days prior to this meeting:

Proposed amended Section 3: "Eighteen members shall constitute a quorum for the transaction of business."

The vice-president stated the proposed amendment, and upon a show of hands, it was carried unanimously.

Mr. R. H. Anderson, Chapter Representative to the Board of Direction of the Society, reported the actions of the Board at its November meeting. He stated that the proposed Society Yearbook, to incorporate the Constitution, By-Laws, Code of Ethics, and possibly a roster of the Society membership, would be acted upon at the next meeting, and that he desired an expression of the will of the Chapter as to the methods of financing the publication. A show of hands on the several proposals submitted, resulted in the Chapter favoring the publication of the Constitution and Code of Ethics only. A second vote, to determine second method favored, was for the publication of the above and the Society roster in the ILLINOIS ENGINEER.

Mr. Anderson mentioned that there was some talk about starting a Ladies' Auxiliary. No comment. He also advised us that the Annual Meeting of the Society would be held in Peoria on April 3-5.

The secretary and treasurer's reports were read. The secretary's report showed that three new members had been added to the chapter roll, while the loss for the year was 34. The latter figure, while it seems high, is

somewhat misleading, too. Actually, it is the result of the chapter rule that a person will be carried on the roll for two years after he has ceased paying dues. This chapter split into two chapters just long enough ago (the Rockford Chapter was organized two years ago) so that the members who left the parent chapter and did not continue to pay dues to this chapter, have now been dropped. The treasurer's report showed that we are spending our reserve slowly, and that at some time in the future it will be necessary either to tighten our belts on expenditures or find a new or increased source of income. The balance on hand at the end of the year was \$709.64.

The chairmen of the various chapter committees were called upon for reports concerning their activities.

Mr. S. E. Johnson, chairman of the Committee on Engineer-in-Training, suggested that the new chairman of that committee contact the high schools in the area in order to confer with prospective engineering students, and that this be done immediately.

Mr. H. F. Walder, chairman of the Legislative Committee, reported that 1951 was the biggest legislative year in the Society's history.

Hon. C. K. Willett, chairman of the Committee on Community Planning, made several remarks concerning the legislation proposed and adopted by the Illinois Legislature.

Mr. W. E. Gronberg, chairman of the Membership Committee, introduced six prospective members—Messrs. Chotka, Hankins, Kennedy, Lundy, Magliola and Osback. Hankins and Osback filled out applications before the meeting closed.

The next order of business was the election of officers for 1952. Mr. Walder, acting for the Nominating Committee, proposed the following slate:

For President—V. E. Hopper

For Vice-President—H. W. Donaldson

For Secretary-Treasurer—L. F. Holstein.

The secretary assumed the chair, since Mr. Hopper was a candidate and, upon a call for further nominations and hearing none, declared the nominations were closed. Mr. Walder moved, seconded, that the secretary cast a unanimous ballot for the nominees. Carried. The secretary cast the ballot and declared the election of the slate as stated.

The chairman then turned the meeting over to Mr. R. M. Brown, who introduced Dr. Reid A. Bryson, a member of the Department of Meteorology of the University of Wisconsin. Dr. Bryson spoke on "Weather—Past and Present." He gave us a very interesting history of weather and climate, from about a billion years ago up to the present, and predicted that we were in the early stages of a cold, wet cycle, which would last until about 1970. He told us how very small average annual temperature changes could make extremely large climatic differences—such as a five-degree lowering of

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the average annual temperature would result in a new ice cap.

The meeting adjourned at 9:50 p. m., after which refreshments were served.

A. H. FERGER, *Secretary*

* * *

Resolution passed by the Rock River Chapter, Illinois Society of Professional Engineers at Dixon, Illinois, on the death of Mr. Robert L. Schoenberger.

"In recognition of the sincere interest of Robert L. Schoenberger in the Rock River Chapter, Illinois Society of Professional Engineers, the Rock River Chapter, Illinois Society of Professional Engineers at its annual meeting at Dixon, Illinois, on January 11, 1952, wishes to express its sense of personal loss in the death of Mr. Schoenberger, and its appreciation of his services as a member of the Society.

"Mr. Schoenberger was a charter member of the Society and was always willing to contribute his enthusiasm and new ideas for the advancement and betterment of the engineering profession.

"BE IT THEREFORE RESOLVED, that this expression of appreciation be sent to the family of Mr. Schoenberger, also that it be spread upon the minutes of the meeting."

Resolution passed by the Rock River Chapter, Illinois Society of Professional Engineers at Dixon, Illinois, on the death of Mr. James M. Martin.

"In recognition of the able services of James M. Martin in the Rock River Chapter, Illinois Society of Professional Engineers, the Rock River Chapter, Illinois Society of Professional Engineers at its annual meeting at Dixon, Illinois, on January 11, 1952, wishes to express its sense of personal loss in the death of Mr. Martin, and its appreciation of his services as a member of the Society.

"Mr. Martin was a charter member of the Society and as an active member of various committees over a period of years, aided in bringing strength and prestige to the Society.

"BE IT THEREFORE RESOLVED, that this expression of appreciation be sent to the family of Mr. Martin, also that it be spread upon the minutes of the meeting."

Meat controls only seem to make hamburger higher priced than steak.

Small minds talk about people;

Average minds talk about things;

Great minds talk about ideas.

—Sign in an educational center

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These items are from information furnished by the Engineering Societies Personnel Service, Inc., Chicago. This SERVICE is operated on a co-operative non-profit basis by the Illinois Society of Professional Engineers, and the national societies of Civil, Electrical, Mechanical and Mining and Metallurgical Engineers. Apply to ESPS, Chicago and the key number indicated. Prepared ENGINEERS AVAILABLE advertisements limited to 40 words, with typed resumé attached may be submitted to ESPS Chicago by members of the Illinois Society of Professional Engineers at no charge.

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POSITIONS AVAILABLE

Tool and Die Designer. Age: to 45. Knowledge: Sheet metal and deep drawing helpful. Duties: Tool and die design work for a manufacturer of air conditioning. Company will pay moving expenses and the fee. Salary: \$400 to \$450. Location: Wisconsin. T-8514(a)

Tool Engineer, M.E. Age: to 45. Two or more years' experience in tool and die tryout and checking. Knowledge: Sheet metal fabrication. Duties: 30% time on the board assisting tool and die designers and 70% time in tryout and follow-up. Company will pay moving expenses and the fee. Salary: \$500 month. Location: Wisconsin. T-8514(b)

Methods Engineer. Age: to 45. Two or more years' experience in sheet metal methods or processing. Knowledge: Sheet metal fabrication. Duties: Project or area methods, processing, and writing process sheets. Company will pay moving expenses and fee. Salary: \$00-\$450 month. Location: Wisconsin. T-8514(c)

Sales, C.E. or Arch. Age: to 35. Recent graduate or better. Knowledge: Blue prints and construction drawings. Duties: Selling metal building materials to industrials, architects, and engineers. Will help on fee. Salary: \$100 a week. Location: Chicago. Short trips. Car required. R-8515

Designer-Estimator, M.E. Age: 28-50. Two plus years' experience designing pressure vessels to A. S. M. E. code. Knowledge of design and estimating. Duties: Design, estimating and partial supervision of sheet metal fabrication of pressure vessels. Company will help on fee. Salary: up to \$9,000. Location: Chicago. R-8516

Project Engineer, M.E. Five years experience. Duties: Designing and developing new machinery for metal finishing trade. Previous experience in automatic machinery desired. Should have personality to travel and contact trade, determine their requirements and then design machinery. Salary: \$6,000. Location: South Michigan. T-8517(a)

Draftsmen—Mechanical, 2. Three years experience on drawing board. Duties: Detailing and drafting on special automatic machinery got metal finishing trade. Salary: Open. Location: South Michigan. T-8517(b)

Structural Designer, C.E. Two years' experience structural design work. Knowledge: Buildings. Duties: Structural design and some field work for consulting engineering company. May negotiate the fee. Salary: \$8,000. Location: Western Chicago sub. R-8518

Quality Control Engineer. Familiar with machine shop operations. Previous experience with internal combustion engine manufacture preferred. Salary: \$6,000-\$7,000. Location: Detroit. T-8519(a)

Project Engineer, M.E. Background of design and test work on small air-cooled engines. (b) **Test Engineer** with experience on automotive or aircraft engines. (c) **Designers** with experience on small air-cooled engines. Salary: Open. Detroit. T-8519(b)

Designer. Recent graduate or better. Duties: Some design and some general maintenance of R. R. car parts. Location: Calumet district. Salary: \$325-\$350 month. R-8520

Industrial Engineer. Staff graduate. Age: 30 plus. Duties: Production control incentives, some accounting, machine shop, some woodworking. Constant traveling. 6 to 12 months assignments. Salary: \$6,600 plus expenses. R-8521

MEN AVAILABLE

Field Engineer, C.E., 27. Twenty-one mos. inspector to inspect the quantity and quality of materials used in the construction of a bay bridge. Nine mos. bridge draftsman design and detail of R. R. bridge repair. \$5,000. Midwest. 263PE

Const. Supt., C.E., 30. Three yrs. construction superintendent and field engr. for contractor on any job that comes up, handle an average of 12 employees and jobs from \$20,000 to \$180,000. Salary: \$6,300. Midwest. 264PE

Development Engineer, M.E., 29. Nine mos. industrial engineer doing mobilization planning. Coordinating agent with industry to ascertain ability to perform and make planning with them. One yr. and one-half statistical engineer. Compiled farm equipment statistical data, coordinated allied equip. failures and revisions with engrs., organized technical library. Two yrs. mechanical engr., coordinator between basic design and manufacturing of sheet metal products and power board equipment. \$6,500. Midwest. 265PE

Process Engineer; Chem. Eng., 28. Nine and one-half yrs. process eng., troubleshooting on production line. Establishing new products and production procedures, laboratory and quality control work. \$5,000. Chicago. 266PE

Structural Designer, C.E., 29. Five and one-fourth yrs. structural design on light and heavy industrial buildings for the feed processing and storage industry. Approx. one-

half on steel and one-half on concrete. Small amount of time design and estimating. Considerable amount of drawing. \$5,800. Chicago. 267PE

Production Engineer, M.E., 25. One yr. in executive training program. The program consisted of working in the shop, assembly dept., inspection dept., shipping and receiving dept., and special projects. Some of the special projects were assembling precision seal cylinders, some plant layout, job work places, routing parts through shop and improving of order processing methods. \$3,900. Chicago. 268PE

Consultant Management. 54. Twenty-nine yrs. management consultant. Doing organization, administration, personnel training, special problems, analysis, sales. \$8,000. Midwest. 269PE

Chief Eng., M.E., 32. Three yrs. project eng. originate designs, test apparatus and experiments for engr. equip., improve the operation of equip., by redesign and experimentation, supervised designers and detailers. Four and one-half yrs. development eng. Developed new method for improving surface finish of cold drawn steel. Devised method to reduce cost of production, experiment to design new products, developed test apparatus that detected flaws in product. One yr. and one-half designing equip. \$7,700. Chicago. 270PE

Statistical Research. Ph.D. 74. Ten yrs. lecturer in math, regular teacher of college math., statistical research and surveys. \$450 mo. Chicago. 271PE

Project Engineer, C.E., 27. One yr. preliminary work to const. of two large apart. proj. consisting of 2,760 units, estimating quantities and costs, making cost comparisons, setting up shop drawing files, personnel interviewing, liaison work. Ten mos. field eng. on installation of sewers, water mains, sidewalks, and pavements. Nine mos. ass't eng. Major portion of time spent in field on construction of large lime kiln. \$5,700. Midwest. 272PE

Designer, 44. Seven yrs. self employed as consulting machine designer, product designer and tool designer; work involved redesign of optical trade machinery, design of transformer lamination and other dies, stacking chutes, conventional jig and fixture design, electrical chemical plant equipment and layout for radio components manufacture. One yr. tool design for explosives plant. Six mos. production eng. on optical and fire control equipment. \$8,400. Midwest. 273PE